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A method of producing a ≥4 kilohertz repetition rate narrow width excimer laser beam comprising:

oscillating a laser beam whereby the laser beam exits a first barium fluoride crystal window of a chamber;

controlling the laser beam to a predetermined narrow width; and passing the predetermined narrow width laser beam through a second barium fluoride crystal window of the chamber to provide a ≥4 kilohertz repetition rate excimer laser beam.

- 2. A method as claimed in claim 1 wherein the ≥4 kilohertz repetition rate excimer laser beam has a power of greater than or equal to 10 mJ.
- 3. A method as claimed in claim 1 wherein the barium fluoride crystal windows maintain durability over 500 million pulses of the laser beam
 - An excimer laser comprising:

 a source of a laser beam and

 one or more windows comprising barium fluoride.
- 5. An excimer laser according to claim 4, wherein the laser beam has a power of greater than or equal to 10 mJ.
- 6. An excimer laser according to claim 4, wherein the laser beam has a repetition rate of greater than or equal to 4 KHz.
- 7. An excimer laser according to claim 5, wherein the laser beam source is argon fluoride.
- 8. An excimer laser according to claim 4, wherein the laser beam source is krypton fluoride.



- An excimer laser according to claim 7 further comprising:
 a source for annealing the one or more windows.
- 10. An excimer laser according to claim 4 wherein the windows maintain durability over 500 million pulses of the laser beam.
- 11. An excimer laser comprising:
 a source for a laser beam;
 one or more windows comprising barium fluoride; and
 a source for annealing the one or more windows.
- 12. An excimer laser according to claim 11, wherein the laser beam has a power of greater than or equal to 10 mJ.
- 13. An excimer laser according to claim 11, wherein the laser beam has a repetition rate of greater than or equal to 4 KHz.
- 14. An excimer laser according to claim 11, wherein the laser beam source is argon fluoride.
- 15. An excimer laser according to claim 11, wherein the laser beam source is krypton fluoride.
- 16. An excimer laser window comprising barium fluoride.
- 17. A method of producing a predetermined narrow width laser beam comprising: oscillating a laser beam whereby the laser beam exits a first window of a chamber;

widening the laser beam through one or more prisms; controlling the laser beam to a predetermined narrow width; and

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passing the predetermined narrow width laser beam through a second window of the chamber, wherein the first and second windows of the chamber are comprised of barium fluoride.

- A method according to claim 17, wherein the laser beam has a power of 18. greater than or equal to 10mJ.
- A method according to claim 17, wherein the laser beam has a repetition rate 19. of greater than or equal to 4 KHz.
- 20. A method according to claim 17, further comprising pulsing the laser beam over 500 million pulses.
- A method according to claim 20, wherein the first and second window 21. maintain durability.
- A method according to claim 20, wherein the laser beam is pulsed over 900 22. million pulses and the first and second window maintain durability.
- 23. A method according to claim 17, further comprising: annealing the first window.
- 24. A method according to claim 23, further comprising: annealing the second window.
- A method according to claim 17, wherein the laser beam source is argon 25. fluoride.
- A method according to claim 17, wherein the laser beam source is krypton 26. fluoride.